

Claims

1. A coolant circuit (10) with at least one heat source (12), a radiator (14), and a bypass line (22), which connects a radiator inlet (18) to a radiator return (20) and whose junction (24) has a control valve (26) disposed in it, whose throttle body (58) can be electrically triggered as a function of operating parameters and environmental parameters by means of at least one control unit (40, 42) and divides the coolant flow between the radiator inlet (18) and the bypass line (22), characterized in that according to a characteristic curve of the control valve (26), the control unit (40, 42) determines a set-point value (50) for the position of the throttle body (58), which sets a ratio of the radiator volume flow to the total coolant flow at the control valve (26) which equals the ratio between the difference of a temperature at the outlet (36) of the bypass line (22) minus a set-point temperature at the inlet of the heat source (12) and the difference of the temperature at the outlet (36) of the bypass line (22) minus a temperature at the outlet of the radiator (14), where the ratio of the radiator volume flow to the total coolant flow is set equal to zero when there is a negative value and is limited to one when there is a value greater than one.

2. The coolant circuit (10) according to claim 1, characterized in that the throttle body (58) is embodied as a valve tap, has at least one distributor conduit (72) passing through it, and can be moved around a rotation axis (64) by a drive mechanism (44).

3. The coolant circuit (10) according to claim 2, characterized in that the throttle body (58) has a spherical surface and an internal distributor conduit (72), which extends lateral to a rotation axis (64) and is open at one circumference surface (82) essentially parallel to the rotation axis (64), while the opposite circumference surface (84) is closed.

4. The coolant circuit (10) according to one of claims 2 or 3, characterized in that the throttle body (58) is supported in a valve body (60) that has a temperature sensor (32), which protrudes into the distributor conduit (72) in the vicinity of the rotation axis (64).

